greater risk of developing TdP with Q. We investigated gender as a factor influencing Q's effect on QTc and QTd. *Methods:* 24 healthy subjects ages 18–35 (12 women and 12 men) were enrolled in a randomized, placebo-crossover trial of single doses of intravenous (4 mg/kg) and oral (229–332 mg) quinidine. ECGs and serum concentrations were determined over a 4 hour period after the dose. QTc and QTd was measured using an automated computer program algorithm (Marquette Electronics, Inc.). A mean QTc and QTd value was calculated for each subject at baseline and after Q.

mean ± SD (msec)	Females	Males	P
QTc baseline	413 ± 11	397 ± 9	< 0.01
QTc quinidine	462 ± 11	441 ± 17	< 0.05
QTd baseline	18 ± 9	27 ± 9	< 0.05
QTd quinidine	26 ± 17	25 ± 11	NS

Conclusions: 1) QTd was greater in men than in women. 2) Q appears to increase QTd only in women. This difference may contribute to the increased risk of TdP in women.

1092 CT and Coronary Calcification

Wednesday, March 19, 1997, 3:00 p.m.–5:00 p.m.
Anaheim Convention Center, Hall E
Presentation Hour: 4:00 p.m.–5:00 p.m.

1092-64 High Attenuation Abnormalities on Chest CT Scan: A Marker of Amiodarone Pulmonary Toxicity

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Amiodarone (AMIO) is a commonly used antiarrhythmic drug. Pulmonary toxicity (pulm tox) is a serious side effect; its clinical presentation varies, correlates poorly with cumulative drug dose and is difficult to diagnose with noninvasive tests. AMIO tissue deposition, with its high iodine content, can be detected as pulmonary parenchymal and pleural attenuation (tissue density) on chest computed tomography (CT) and these findings, we hypothesized, would correlate with clinical toxicity. 13 pts taking AMIO (age 65 ± 13 years, 92% male, 92% with coronary artery disease) underwent chest CT. 12 received AMIO for VT/VF and 1 for AF. Pts were on AMIO for 21 ± 9 mos, on a maintenance dose of 392 ± 40 mg/day, with a cumulative dose of 264 ± 159 gm. Chest CT without contrast was performed and high resolution (HR) CT images (1.5 mm) were obtained. Scans were reviewed for high attenuation abnormalities (Hounsfield units of 70–120). 7 pts were symptomatic (dyspnea, n = 6; cough, n = 4; fever, n = 1) and had nonspecific chest x-ray abnormalities. Of these 7, 6 had high attenuation abnormalities suggestive of AMIO pulm tox. 2 died of respiratory failure attributed to AMIO pulm tox and 4 had AMIO discontinued with resolution of symptoms. The 1 symptomatic pt with negative CT responded to therapy for severe CHF and continued on AMIO. All 5 asymptomatic pts had negative CT scans. The sensitivity/specificity for pulm tox was 100%/100%. *Conclusion:* HRCT scanning was a useful noninvasive test for the clinical diagnosis of AMIO pulm tox.

1092-65 Determinants of Electron-Beam Computed Tomography (EBCT) Rescan Coronary Calcium Score Variability

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Accurate quantitation of coronary calcium and the understanding of interscan variability are critical for EBCT to be a useful clinical tool in the management of coronary artery disease. Differences in coronary calcium score in 203 adult subjects scanned twice using the standard 3 mm protocol were related to timing of ECG scan trigger, maximum breathholding duration (BH), body-mass index (BMI), and one-breath vs. two-breath study protocols. The mean coronary calcium score was 400 ± 529 with a mean absolute calcium score difference of 69 ± 113. The mean percent ECG-trigger at latter part (phase 4) of diastole was 83 ± 28 and mean BH time was 51 ± 19 seconds. Coronary calcium score difference was inversely correlated with the percent of beats triggered during phase 4 of ECG ($r = -0.24$, $p = 0.0006$) and BH capacity ($r = -0.2$, $p = 0.003$), whereas two-breaths scan was associated with higher score variability ($P = 0.02$). Multivariable regression relating calcium score variability with the five determinants studied produced the following regression coefficient (RC):

	phase 4	BH	2-Breaths	BMI	Age
RC	−0.03 ± 0.01	−0.5 ± 0.3	0.05 ± 0.02	0.05 ± 0.02	0.03 ± 0.01
P	0.002	0.04	0.03	0.01	0.05

We conclude that accurate diastolic ECG triggering, longer breathholding, younger age, lower BMI and the use of the one as opposed to the two-breath scan protocol all contribute to lower rescan coronary calcium score variability.

1092-66 Diabetes mellitus is associated with coronary artery calcification in sudden cardiac death

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This study investigates the effects of diabetes mellitus, cigarette smoking, and hypercholesterolemia on coronary artery calcification in cases of sudden coronary death (SCD). We prospectively examined 90 cases of SCD in individuals without a documented history of coronary disease (72 males, 18 females, mean age 51 ± 10 years) by postmortem perfusion fixation and serial sectioning of epicardial arteries. Coronary death was defined as ≥ 1 epicardial artery with ≥ 75% cross sectional luminal narrowing, in the absence of other causes of death at complete forensic autopsy. Postmortem sera were evaluated for thiocyanate (> 90 mg/dl indicative of smoking), total cholesterol (TC), high density lipoprotein cholesterol (HDL-C)(TC > 210 mg/dl and TC/HDL-C > 5 indicative of hypercholesterolemia) and postmortem blood cells for glycosylated hemoglobin (> 10% indicative of diabetes). Calcification was determined histologically in the proximal 4 cm of the left anterior descending, left circumflex, and right coronary arteries. Coronary artery calcification occurred in 17/20 of diabetics (85%), 22/31 hypertensives (71%), 36/55 cigarette smokers (65%), 37/53 hypercholesterolemics (57%), and 61/90 (68%) of total. By ANOVA, diabetes was positively associated with calcification in any artery ($p = 0.03$), especially the left coronary artery ($p = 0.009$), independent of other risk factors. We conclude that coronary artery calcification is only a moderately sensitive predictor of SCD, but is most sensitive in diabetic patients.

1092-67 Risk Factor Correlates for Coronary Artery Calcium Using Electron Beam Tomography in Asymptomatic Men and Women

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Background: Since September 1995, 5,789 asymptomatic individuals participated in self-referred coronary artery calcium (CAC) screening using Electron Beam Tomography (EBT). CAC as determined by EBT aids in assessing the presence of intimal coronary atherosclerosis and predicting a coronary event. We sought to examine the gender differences in self-reported cardiac risk factors relative to the presence of coronary artery calcium.

Methods: Prior to screening, individuals completed a self-administered questionnaire regarding demographic and risk factor information. EBT utilized an Imatron C100 scanner, with the amount of CAC determined using the Agatston scoring method. Individuals were classified into groups according to presence or absence of CAC.

Results: This retrospective population based study consisted of 4,178 males and 1,611 females (mean age 49.4 ± 9.6 and 53.0 ± 9.6, respectively). CAC was detected in 4,513 individuals. Using multiple logistic regression, increased prevalence of CAC was independently associated with male gender ($p < 0.0001$, OR 4.20), age ($p < 0.0001$, OR 1.08), hypercholesterolemia ($p < 0.05$, OR 1.42), current cigarette smoking ($p < 0.05$, OR 1.30), diabetes mellitus ($p < 0.05$, OR 2.23), and hypertension ($p < 0.0001$, OR 1.74). In males, the prevalence of CAC increased with age ($p < 0.0001$, OR 1.08), and hypertension ($p < 0.0001$, OR 2.36). In females, increased prevalence of CAC was independently associated with age ($p < 0.0001$, OR 1.07), hypercholesterolemia ($p < 0.05$, OR 1.68), diabetes mellitus ($p < 0.05$, OR 2.53), and post menopausal estrogen replacement therapy ($p < 0.0001$, OR 0.58).

Conclusion: Risk factors for CAC are different for men and women. EBT screening of asymptomatic individuals with coronary risk factors provides an early opportunity to identify and treat individuals with subclinical coronary atherosclerosis.